2) from the front below the gland on the disc through a single hole of 8 mm dia; 3) on the rear rim of the disc through one hole of 15 mm diameter and six slots of 10 x 10 mm. The instrumentation is described, and some of the experimental results are plotted in Fig.2. The graphs on the left and right show respectively the temperatures of the front and rear faces of the disc. The curve numbers relate to cooling as follows: 1 - only on the rim, 2 - on rim and slots, 3 - on rim and below disc gland 4 - on front side of disc only; 5 - on rear side of disc only. The points marked by 'x' or by a dot relate respectively to thermocouples attached to the blade roots or to the body of the disc. The shape of the curves obtained is discussed. A study of jet cooling was also made on a production model turbine type GT-700-4 (GT-700-4), the disc temperature being measured by fusible inserts. The results, plotted in Fig.4, show that the temperature difference along the radius of a disc between centre and rim is not greater than 50 to 70°C. Methods are available by which the temperature distribution in the disc may be calculated. The methods require a knowledge of the gas temperature in the runner

Card 2/8

and the rate of gas flow, the heat-transfer coefficient from gas to blades and from disc to surrounding medium, the dimensions and physical properties of the material, and finally the temperature of the surrounding medium. The last is particularly difficult to determine and the authors recommend an approximate determination of the disc temperature with the present method of cooling on the basis of generalisation of the experimental results. The following formula is then derived:

$$\Theta = 0.0265 \left(\varphi \frac{\mu_g}{\mu_B} \frac{l}{b} \sin \beta_2 \right)^{0.7} \left(\frac{R\sqrt{z}}{d} \right)^{0.5} \frac{\lambda_B}{\lambda_g} \qquad (8)$$

where: μ_g - gas viscosity, μ_B - air viscosity, l - blade length, b - blade width, R - disc radius, z - heat removed by air jets, d - diameter of air delivery pipe, λ_B - thermal conductivity of air, λ_g - thermal conductivity of gas. The remaining notations are assumed known. In using this formula it should be borne in mind that it is valid for the range of experimental conditions actually used and also for similar designs of disc, frame and

Card 3/8

An investigation of air jet cooling

cooling system. No interpolation formula has been found for the temperature of the centre of the disc which loses heat through the shaft as well as by the cooling air. However, altering the delivery of cooling air to the disc rim also alters the centre temperature and if the delivery of cooling air is G% the following relationship holds:

$$\vartheta = \frac{t_{M.II} - t_B}{t_{M.O} - \frac{t_g + t_B}{2}} \cdot A^{0.275} \qquad (9)$$

where: $t_{M.II}$ - temperature of the metal at the centre of the disc, t_B - temperature of the air, $t_{M.O}$ - temperature of the metal at the rim, t_g - temperature of the gas at the blade root. Values of the coefficient A are 2.5 for a turbine type GT-700-4 and 2.0 for the experimental turbine type GT-700. This formula is approximate and is valid for conditions close to those used in the test. Calculations were made to compare air jet cooling with cooling by blowing air through gaps in the blade roots. Results show that for the experimental turbine type GT-700 cooling through

the blade roots is more efficient because only half the amount of air is required to cool the disc to 500 °C. In the case of turbine type GT-700-4, which is of appreciably greater diameter, cooling through gaps in the roots offers no particular advantage. This is presumably because with cooling through the roots the effective cooling surface is proportional to the disc diameter and thickness, whilst with air-jet cooling the effective surface is proportional to the square of the diameter. As air-jet cooling is simpler to arrange and is less subject to clogging by dirt it is clearly to be recommended in certain cases.

Acknowledgments are expressed to Engineer G.A. Kruglikov, Engineer A.S. Lebedev, Candidate of Technical Sciences L.A. Kuznetsov and Candidate of Technical Sciences B.P. Mironov for their assistance. I.T. Shvets and Ye.P. Dyban are mentioned in the paper for their contributions in the field of gas turbines.

There are 6 figures and 3 Soviet-bloc references.

BDS
L 11209-63
ACCESSION NR: AP3001474 S/0114/63/000/006/0014/0017 57
48

AUTHOR: Osherov, Yu. S. (Engineer)

TITLE: Investigation of temperature fields in the rotor and the casing of the NZL GT-700-4 gas turbine

SOURCE: Energomashinostroyeniye, no. 6, 1963, 14-17

TOPIC TAGS: GT-700-4 gas turbine, temperature distribution in gas-turbines

ABSTRACT: Experimental investigation of temperature distribution in the stationary-type double-casing GT-700-4 gas turbine is reported. Very considerable and undesirable differences between the temperatures of the inlet and the outlet structures of both the high-pressure and the low-pressure (up to 250C) casings were detected. Only the inlets were equipped with a continuous internal insulation; other parts had external insulation (vermiculite-concrete of from 1:4 to 1:8 ratio by volume). The outside temperature of the insulation, 120C, was considered excessive. Some supporting lugs of the turbine cracked during the tests due to the thermal warping of metal and to deformations in the combuster foundation. Rotor temperatures were measured by means of fusible elements. Hub-to-tip temperature difference up to 130C at the outlet was discovered. The data obtained from the

Card 1/2

above experiments was used in designing a modernized version of GT-700-4. As a result of tests, internal insulation is recommended except for a few sections, e.g. the outlet, where the external insulation is considered satisfactory. "The tests were conducted with a participation of N. F. Suzdal'tseva, a TsKTI Engineer." Orig. art. has: 5 figures.

ASSOCIATION: Nevskiy mashinostroitel'ny*y zavod im. V. I. Lenina (Neva Machine-Building Plant)

SUBMITTED: 00 DATE ACQD: 01Jul63 ENCL: 00

SUB CODE: 00 NO REF SOV: 003 OTHER: 000

Card 2/2

OSHEROV, Yu. S., inzh.

Analytical determination of the temperature field of the null of a gas turbine. Izv. vys. ucheb. zav.; energ. 7 no.5:114-118 My '64. (MIRA 17:7)

1. Leningradskiy politekhnicheskiy institut imeni Kalinina. Predstavlena kafedroy teoreticheskikh osnov teploteknniki.

OSHEROVA, Kh.Sh.

Reuse of water eliminated from the cooling systems of heat exchange units. Lakokras.mat.i ikh prim. no.5:81 '60. (MIRA 13:11)
(Paint industry--Equipment and supplies)

OSHEROVA, M.N.

Effect of incomplete poisoning by mercaptophos on the survival and fertility of spider mites. Trudy VIZR no.20 pt.1:18-20 '64. (MIRA 18:10)

USSR/Physics
Photometry
Lights - Measurements

Feb 49

"Photoelectric Photometry of Small Light Streams," A. L. Osherovich, Ye. N. Pavlova, S. F. Rodionov, L. M. Fishkova, Sci Res Phys Inst, Leningrad State U, 18½ pp

"Zhur Tekh Fiz" Vol XIX, No 2

Treats under: (1) sensitivity of a system consisting of a photoelectronic multiplier and a tube amplifier, (2) characteristics of certain types of photoelectronic multiplier which can be

40/49T104

USSR/Physics (Contd) Feb 49

used to measure small light streams, (3) spectrum characteristics of some photoelectronic multipliers, (4) photometer circuit, (5) characteristics of photometer for measuring light streams to 10^{-10} light meters, (6) photometer for measuring light streams to 10^{-12} light meters, (7) photometer with a balance DC amplifier, (8) some applications of the photometer for measuring small illuminations, and (9) photon counter. Includes 16 diagrams. Submitted 19 Apr 48.

40/49T104

OSHEROVICH, A. I.

PA 40/49T104

OSHEROVICH, A. L.

USSR/Geophysics Feb 49
Spectrophotometer
Ozone

"Spectrophotometer With A Secondary Electronic Amplifier for Ozonometric Measurements," S. F. Rodionov, A. L. Osherovich, Sci Res Phys Inst, Leningrad State U imeni A. A. Zhdanov, 4 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 5

Constructed photometric device with secondary electronic amplifier to increase the sensitivity of Dobson's spectrometer for use in a number of problems, in particular, for investigation of so-called "anomalous transparency" effect, measurement of ozone during "white nights," etc. Submitted by Acad A. N. Terenin, 29 Sep 48.

PA 29/49T40

BC

C8

4

2390 **Simple apparatus for ozonometric investigations.** S. I. Rodionov, A. L. Oshmusevich, and E. V. Rdultovskaya (C. R. Acad. Sci. *USSR*, 1949, **66**, 381—383).—The essential parts of the apparatus are a sputtered-Ag quartz light-filter for eliminating the visual part of the solar spectrum, and a photometer, sensitive to u.-v. rays, with a d.-c. amplifier in series with two balanced lamps W. J. King.

METALLURGICAL LITERATURE CLASSIFICATION

OSHEROVICH, A. L.

PA 174T46

USSR/Nuclear Physics - Counters 21 Sep 50
New Techniques
Photons

"Secondary-Electron Counter of Photons," S. F. Rodinov, A. L. Osherovich, Phys Inst, Leningrad State U imeni Zhdanov

"Dok Ak Nauk SSSR" Vol LXXIV, No 3, pp 461-463

Device for counting "visible" photons (3,600 to 6,500), convenient for measuring light flow of order of 10^{-14} - 10^{-15} lumens. Device consists of Dewar, photocathode, liquid air, metal shield

174T46

USSR/Nuclear Physics - Counters 21 Sep 50
(Contd)

Photoshutter, ebonite insulation, high-voltage leads (1,300 v), potentiometer, output of collector, desiccator. Circuit diagram of radiation receiver, using industrial Sb-Cs FEU-15 photocathode. Submitted 12 Jun 50 by Acad A. A. Lebedev.

174T46

USSR/Geophysics - Atmosphere's Trans- May/Jun 52
parency to Ultraviolet

"Electrophotometric Investigations of the Atmosphere's Transparency to the Ultraviolet Region of the Spectrum," Sh. A. Bezverkhniy, A. L. Osherovich, S. F. Rodionov, Geophys Inst, Acad Sci USSR, and Leningrad State U imeni A. A. Zhdanov

"Iz Ak Nauk SSSR, Ser Geofiz" No 3, pp 93-102

Presents spectrophotometric methods for investigating the Sun's radiation in the ultraviolet portion of the spectrum, which are based on the application of the modern electrophotometric app. As a result of the investigations the authors det the values of the mean thickness of the ozone layer in the Earth's atm. They also studied the phenomenon of anomalous atm transparency, which permits one to observe the const layer of aerosols. Submitted 13 Dec 51.

224T74

OSHEROVICH, A.L.

224T74

OSHEROVICH, A. L. 262T73

USSR/Nuclear Physics - Electron Multipliers Jul 53

"Application of Electron Multipliers for Counting of Elementary Particles and Quanta," T. M. Lifshits

Usp Fiz Nauk, Vol 50, No 3, pp 365-432

Review of foreign progress in applying modern methods of electron multiplying to counting of elementary particles and quanta. A total of 149 foreign references appended. The only recent Soviet source cited is S. F. Rodionov and A. L. Osherovich, DAN SSSR, 74,461 (1950), discussing the Kubetskiy photomultiplier (1300 volts) used as a photocounter

262T73

with background noise of 12-45 pulses/min at 183° C and up to 320 pulses/min at 76° C. Author claims that the electron multiplier was invented in 1930 by L. A. Kubetskiy (Authorship Certificate No 24040 of 4 Aug 30).

OSHEROVICH, A. L., DZIMISTARISHVILI, O. D., RAZMADZE, N. A., and RODIONOV, S. F.

"Stellar Electric Photometer With Photomultiplier," Byull. Abastumansk. astrofiz. obser., No 16, 1954, pp 3-7

Tentative results of testing the stellar photometer with photomultiplier (FEU) assembled according to the design by A. L. Osherovich, Ye. N. Pavlova, and others (Zhtekh. fiziki, 1949, 19, 184) are presented. The sensitivity of the photometer allows use of the 33 cm reflector with or without filters up to 9th magnitude stars. (RZhAstr, No 4, 1955)

SO: Sum. No. 568, 6 Jul 55

OSHEROVICH, A.L.

DZIMISTARISHVILI, O.D. OSHEROVICH, A.L.; RAZMADZE, N.A.; RODIONOV, S.F.

Stellar electrophotometer with photo-multiplier. Dokl.AN SSSR 95 no.5:955-956 Ap '54. (MLRA 7:4)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova Abastumanskaya astrofizicheskaya observatoriya Akademii nauk Gruz.SSR. Predstavleno akademikom A.A.Lebedevym. (Photometry, Astronomical)

OSHEROVICH, A. L.

USSR/Geophysics - Luminescence

Card : 1/1

Authors : Osherovich, A. L. and Rodionov, S. F.

Title : Luminescence of the nocturnal sky in the range of from 1 to 3 nicrons

Periodical : Dokl. AN SSSR, 96, Ed. 6, 1159 - 1160, June 1954

Abstract : A special electro-photometer with sulfur-lead photo-resistance was designed for measuring the luminescence intensity of the nocturnal sky in a spectrum range of from 1 to 3 μ. The measurements were carried out during September 13, 16 and 20, 1953 from the Mountain Astronomical Observatory of the Acad. of S. USSR at an altitude of 2130 m. The lens of the photometer was always directed toward alpha-Cygnus. The results obtained are given in graphic form. Nine references. Graphs.

Institution : The A. A. Zhdanov State University, Physics Institute, Leningrad

Presented by : Academician A. N. Terenin, March 18, 1954

CSHEROVICH, A.L.

Photoelectric Equipment for Registering Super-thin Structure of Spectral Lines
Vest. Leningrad U., Ser. Fiz. i Khim., no. 1, 1954, p. 3

USSR/ Laboratory Equipment. Apparatuses, Their Theory, I
Construction and Application.

Abs Jour: Referat. Zhur.-Khimiya, No. 3, 1957, 87317.

Author : A.L. Osherovich, A.G. Zhiglinskiy.

Inst : Leningrad University.

Title : Photoelectric Arrangement for Recording Ultrathin Structure of Spectral Lines.

Orig Pub: Vestn. Leningr. un-ta, 1956, No. 4, 3 - 8.

Abstract: The photoelectric arrangement with FEU-17 and FEU-18 for the recording of the ultrathin structure (UTS) of lines in the visible spectrum range is described. The photocurrent is amplified by a single stage amplifier and recorded by a EPP-09. An indicator unit for giving monitoring pulses to

Card 1/2

USSR/ Laboratory Equipment. Apparatuses, Their Theory, I
Construction and Application.

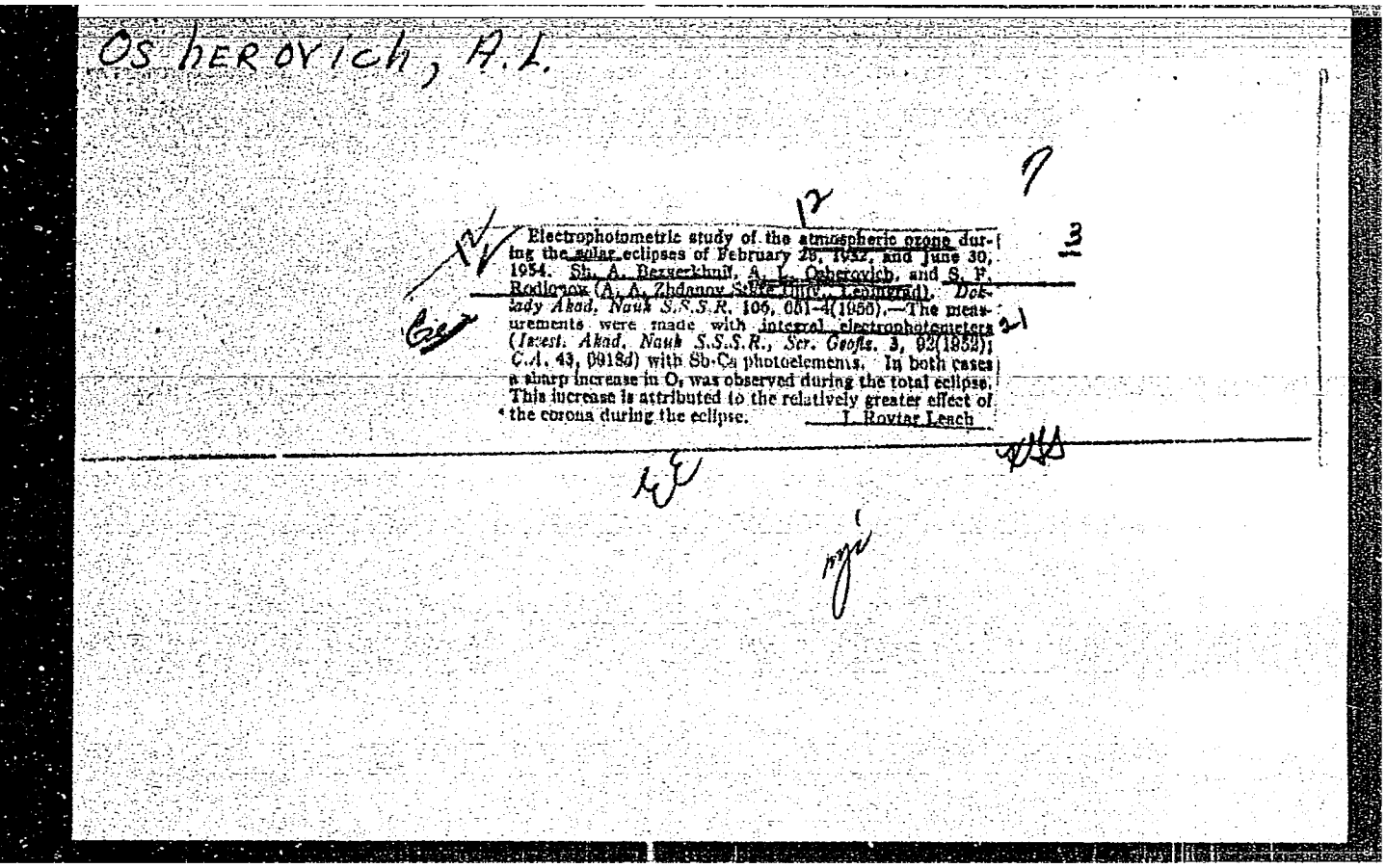
Abs Jour: Referat. Zhur.-Khimiya, No. 8, 1957, 27312.

the EPP-09 at a pressure change in the apparatus is developed. It is shown that the changing over to the photoelectric recording does not decrease the resolving power of the apparatus.

Card 2/2

OSHEROVICH, A.L.

Variations in the luminosity of the nocturnal sky in the night sky 1 to 3.4 micron range. Vest.Len.un.11 no.22:87-90 '56. (MLRA 10:2)
(Night sky)



OSHEROVICH, A. L.

Electrophotometric study of the atmospheric ozone during the solar eclipses of February 25, 1952, and June 30, 1954. Sh. A. Bezverkhnii, A. L. Osherovich, and S. F. Rodionow (A. A. Zhdanov State Univ., Leningrad). *Doklady Akad. Nauk S.S.S.R.* 106, 661–4(1956).—The measurements were made with integral electrophotometers (*Izvest. Akad. Nauk S.S.S.R., Ser. Geofis.* 3, 92(1952); *C.A.* 43, 9018*d*) with Sb-Cs photoelements. In both cases a sharp increase in O_3 was observed during the total eclipse. This increase is attributed to the relatively greater effect of the corona during the eclipse. I. Rovtar Leach

OSHEROVICH, A.L.; RODIONOV, S.F.; YAKHONTOVA, V.Ye.

Absolute brightness of some areas in the Milky Way. Dokl.AN SSSR 111 no.2:316-318 N '56. (MLRA 10:1)

1. Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova. Predstavleno akademikom A.A. Lebedevym.
(Milky Way)

Csherovich, A.L.

AUTHOR: Csherovich, A.L. 120-6-27/36

TITLE: A photoelectric Fluorimeter (Fotoelektricheskiy flyuorometr)

PERIODICAL: Pribory i Tekhnika Eksperimenta, 1957, No.6, pp. 104 - 10((USSR).

ABSTRACT: A photoelectric fluorimeter is described which can be used to study weak fluorescence from both solids and liquids. The threshold of sensivity is 10^{-12} lumen and the time constant is 1.5 sec. The circuit used is shown in Fig.2. The sensitive element is an ФЭУ-17 photomultiplier (Ref.5-8). A recording potentiometer (ЭПП-09) is used at the output and the zero drift does not exceed 0.2 - 0.3 μA/hour. The instrument is cheap, stable and linear. An accuracy of 3 - 10% can be achieved. There are 4 diagrams and 8 references, 5 of which are Slavic.

ASSOCIATION: Leningrad State University im. A.A. Zhdanov (Leningradskiy Gosudarstvennyy Universitet im. A.A. Zhdanova)

SUBMITTED: April 10, 1957.

AVAILABLE: Library of Congress.

Card 1/1

OSHEROVICH, A. A.

"The Basic Parameters of the Photo-Multipliers, type $\Phi\frac{1}{2}$Y."

A conference on Electron and Photo-Electron Multiplier; Radiotekhnika i Elektronika, 1957 Vol. II, No. 12, pp. 1992-1557 (USSR)

Abst: A conference took place in Moscow during February 28 March 6, 1957 and was attended by scientists and engineers from Moscow, Leningrad, Kiev and other centres of the Soviet Union. Altogether, 28 papers were read and discussed.

SOV/51-4-6-2/24

AUTHORS: Osherovich, A.L. and Savich, I.G.

TITLE: On Measurement of the 3^3P and 3^1P Level Lifetimes of Helium Atoms by the Delayed Coincidence Method (Ob izmerenii vremeni zhizni urovney 3^3P i 3^1P atomov geliya metodom zaderzhannykh sovpadeniy)

PERIODICAL: Optika i Spektroskopiya, 1958, Vol IV, Nr 6, pp 715-718 (USSR)

ABSTRACT: The usual methods of measurement of the absolute values of probabilities of transitions in atoms, from which the values of the level lifetimes τ_k are derived, yield results with 7-10% precision. The error in determination of the absolute values of τ_k is due to the errors in determination of the number of gas atoms in a unit volume N. The method of delayed coincidences makes it possible to measure τ_k directly without the necessity of determination of N. Following Heron, McWhirter and Rhoderick (Refs 1, 2) the present authors applied the delayed coincidence method to measurement of lifetimes of the 3^3P and 3^1P levels in helium. Two signals enter the coincidence circuit. Into one channel a variable delay line is introduced and the number of pulses per unit time in this channel is constant. If in the second channel the number of pulses per unit time changes exponentially with time, then the dependence of the counting rate of the number of

Card 1/4

On Measurement of the 3^3P and 3^1P Level Lifetimes of Helium Atoms by the Delayed Coincidence Method

coincidences N_c per second on the value of the delay time τ_d introduced into the first channel, will also vary exponentially. This is true only for delays longer than the resolving time of the apparatus. In recording of emission of excited atoms the slope of the straight line $\log N_c = f(\tau_d)$ is equal to the mean value of the excited-state lifetime of the atoms. Helium atoms were excited by a pulse-modulated electron beam. Emission of helium atoms was recorded by a photomultiplier FEU-19. The studied helium lines at 3889 Å (3^3P-2^3S transition) and at 5016 Å (3^1P-2^1S transition) were separated out by means of filters. Pulses from the photomultiplier output were fed to the coincidence circuit SS (Fig 1) through a cathode repeater KP. The resolving time of the coincidence circuit was 10^{-7} sec. Pulses from a generator 26-I were fed simultaneously to the modulating grid of the electron gun used for excitation of helium, and, through an attenuator and a variable delay line, to the second channel of the coincidence circuit. The delay time could be varied from 2×10^{-8} to 5×10^{-6} sec. In recording the 3^3P-2^3S (3889 Å) transition a dependence of $\log N_c$ on

On Measurement of the 3^3P and 3^1P Level Lifetimes of Helium Atoms by the Delayed Coincidence Method

the delay time τ_d (shown in Fig 2) was obtained. This figure shows a typical result obtained by the delayed coincidence method. From the slope of the rectilinear portion of the graph in Fig 2 the mean value of the 3^3P level lifetime was found to be (1.00±0.08) x 10^{-7} sec. The table on p 717 compares the values of the lifetimes of the 3^3P level obtained by various authors. The first three are calculated values and the fourth is an experimental one. The agreement between these values and those of the present authors, given last in the table, is satisfactory. The value of the lifetime of the 3^3P level was found to be independent of pressure between 0.025 and 0.09 mm Hg. This independence of pressure does not hold for the 3^1P-2^1S transition which is subject to the "capture" effect (Ref 10). The 3^1P-2^1S transition was recorded at 0.01 mm Hg. Under these conditions the mean lifetime of the 3^1P level was found to be (3.3 ± 0.2) x 10^{-8} sec. This result agrees with the results of Heron and co-workers (Refs 1, 2). Theoretical calculations, however, give a value of 2 x 10^{-9} sec for the 3^1P level lifetime. To measure such a small value of the lifetime

On Measurement of the 3^3P and 3^1P Level Lifetimes of Helium Atoms by the Delayed Coincidence Method

it is necessary to excite helium at very low pressures. This means that the photoelectric part of the apparatus must have much higher sensitivity than that which could be obtained at the present time. There are 2 figures, 1 table and 11 references, 4 of which are American, 4 English, 2 Soviet and 1 German.

ASSOCIATION: Leningradskiy Gosudarstvennyy Universitet, Fizicheskiy Institut (Leningrad State University, Physics Institute)

SUBMITTED: July 13, 1957

OSHEROVICH, A.L.

IUGG/WMC OZONE SYMPOSIUM

Summary No. 38
(Revised Version)

OXFORD, JULY 1959.

ON CERTAIN OZONOMETRIC INVESTIGATIONS IN USSR

By A.L. Osherovich and S.P. Radionov,
Leningrad, USSR.

1. Since the year 1934 at the Physical Institute of the Leningrad State University, a series of investigations on the transparency of the atmosphere in the ultra-violet region have been carried out. Measurements have been made of the ozone content in the atmosphere, taking into consideration a number of factors.

Electrophotochemical methods of high sensitivity, tested out in our laboratory, have been applied in these investigations. Most of the observations to measure ozone were made in high mountains, (Mount Elbrus, Caucasus).

2. At different times different photometric methods were used:
(a) A photon counter with a double quartz monochromator
(b) A photomultiplier with a double monochromator
(c) A simple ozonometer with a photocell or photomultiplier supplied with a system of light filters.
(d) A modernized Dobson spectrometer with a photomultiplier.
(e) An automatic self-recording electrophotometer with light filters.

3. During the period from 1948 till 1958 at different places in the USSR, measurements of the direct solar ultra-violet light were made. The data obtained were worked up according to the Lambert-Bouguer law and the values x of the total ozone content in the atmosphere were determined.

4. As early as 1934-1940 the ozone contents, a wave distribution curve of the solar brightness of the spectrum was obtained in absolute units, and the ultra violet limit of the solar spectrum observed by means of the most sensitive method was determined.

5. We discovered the so-called effect of anomalous transparency of the atmosphere at great zenith distances of the sun, which hindered us to apply the "Umkehr" method. The effect is explained by the presence in the atmosphere of a permanent layer of aerosols with selective transparency with a maximum of extinction at 3800–4000 Å. The theory of the effect was given.

6. A whole series of [illegible] data were obtained by [illegible] of moonlight.

7. A sharp increase of the quantity of [illegible] during the solar eclipse in the years [illegible] was observed. [illegible] during the full eclipse was shown.

8. In comparing the ozonometric data with [illegible] connected with the atmosphere. [illegible] further [illegible].

9. We have made also a comparative analysis of [illegible] ozonometers.

5(1)

SOV/32-25-3-44/62

AUTHORS: Osherovich, A. L., Sheynina, Z. A.

TITLE: Highly Sensitive Flame Spectrophotometer With a Photomultiplier (Plamennyy vysokochuvstvitel'nyy spektrofotometr s fotoumnozhitelem)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 3, pp 362-364 (USSR)

ABSTRACT: A simple, highly sensitive flame-spectrophotometric apparatus was designed which completely meets all requirements made of such devices. An air-acetylene flame served as source of light. Sprayer and burner have already been described (Ref 10). A monochromator UM-2 is used. A circuit diagram of the photometer is given (Fig 1). Photomultipliers with antimony-cesium (FEU-29, FEU-17 and FEU-11), bismuth-cesium (FEU-32 or FEU-12), oxygen-cesium (F2U-22 and FEU-VEI), and bismuth-silver-cesium photo cathodes can be used whose absolute spectral data (Fig 1) and sensitiveness (Table)are given. The photomultiplier is fed by a rectifier with an electron stabilization of the type VS-16. In order to feed the d.c. amplifier, rectifiers with an electron stabilization of the types VS-12 and VS-13 can be used. Ores were analyzed

Card 1/2

Highly Sensitive Flame Spectrophotometer With a Photomultiplier

as to their Li, Rb, Cs, K, Na and Sr contents on the above mentioned apparatus. The Li, K and Na contents were determined according to D. N. Ivanov's method (Refs 1, 4, 5) and Rb and Cs according to the method of additions (Refs 1, 6). The mean relative error of the respective determinations is ± 5%. There are 2 figures, 1 table and 6 Soviet references.

ASSOCIATION: Tsentral'naya laboratoriya Severo-Zapadnogo Geologicheskogo upravleniya i Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta
(Central Laboratory of the North-West Geological Administration and Physics Institute of the Leningrad State University)

~~24 (7)~~ 24.2120 66451

AUTHORS: Osherovich, A. L., Petelin, G. M. SOV/20-129-3-19/70

TITLE: On Measuring the Lifetimes of the Terms 3^1S_0, 3^3P_2, 3^3D_2, 3^1P_1 and 3^1D_2 of Neon by the Method of Delayed Coincidences

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 3, pp 544-546 (USSR)

ABSTRACT: The relative values of the transition probabilities A and of the oscillator strength f for the s-p-lines of neon were determined by R. Ladenburg (Ref 1) with the method of anomalous dispersion. J. Griffiths (Ref 2) determined the average lifetime of some neon terms by means of a Kerr cell. As R. Ladenburg's evaluation is only an approximate one, and as the data obtained by Griffiths were determined only by an indirect method, the authors endeavored to employ the method of delayed coincidences. The neon was excited by means of an electron beam in form of a sequence of rectangular pulses of the duration of $\sim 10^{-7}$ sec with the repetition frequency of 10^4 cycles. In this connection, the time dependence of the number of coincidences between the pulses of the photomultiplier (which records decrease in luminescence of the neon atoms)

Card 1/4

On Measuring the Lifetimes of the Terms 3^1S_0, 3^3P_2, 3^3D_2, 3^1P_1 and 3^1D_2 of Neon by the Method of Delayed Coincidences

and of the delayed pulses of the transmitting generator was recorded. The authors separated the observed neon lines by means of monochromators of the type UM-2 and DS-4 (the latter with a diffraction lattice), and used specially selected antimony-cesium photomultipliers. Two diagrams show the typical curves for the dependence of logarithm $\lg N_{coinc}$ of the number of coincidences on the delay time t_d. The third diagram then shows the linear ranges of the dependence of $\lg N_{coinc}$ on t_d for these transitions. From the transition $2^1P_1 - 3^1S_0$, λ 5852.49 Å the lifetime $\tau_{3^1S_0} = 5.1.10^{-8}$ sec and from the transition $2^3P_1 - 3^1S_0$, λ 5400 Å, $\tau_{3^1S_0} = 4.6.10^{-8}$ sec was determined. The results obtained by the measurements discussed are shown in a table. The average lifetimes of the neon terms determined by the authors differ by nearly one

Card 2/4

On Measuring the Lifetimes of the Terms 3^1S_0, 3^3P_2, 3^3D_2, 3^1P_1 and 3^1D_2 of Neon by the Method of Delayed Coincidences

order of magnitude from Ladenburg's evaluation. In the second table the relative lifetime values are compared. When determining the accuracy of the method of delayed coincidences with modulation of the electron beam, various processes occurring in the plasma, which distort the true lifetime of the terms, must be taken into account. The development of a method with recording of cascade-transitions, and the introduction of a delay into the channel for the recording of the upper transition permits the experimental evaluation of the correction for the influence exerted by the higher levels. There are 1 figure, 2 tables, and 5 references, 3 of which are Soviet.

ASSOCIATION: Fizicheskiy institut Leningradskogo gosudarstvennogo universiteta im. A. A. Zhdanova (Physics Institute of Leningrad State University imeni A. A. Zhdanov)

PRESENTED: July 18, 1959, by A. N. Terenin, Academician

66451

On Measuring the Lifetimes of the Terms 3^1S_0, 3^3P_2, 3^3D_2, 3^1P_1 and 3^1D_2 of Neon by the Method of Delayed Coincidences SOV/20-129-3-19/70

SUBMITTED: July 4, 1959

Card 4/4

S/033/60/037/005/023/024
E032/E514

AUTHORS: Rodionov S.F. and Osherovich A.L.

TITLE: In Connection with the Paper by V. I. Moroz Entitled "The Infrared Spectrum of the Night Sky up to 3.4 μ"

PERIODICAL: Astronomicheskiy zhurnal, 1960, Vol. 37, No. 5, pp. 940-941

TEXT: In the above paper it is stated that "the region 2.0 μ has been studied for the first time" and "the emission spectrum of the night sky has not so far been investigated in the region 2-3.5 μ" The present authors point out that these statements are inaccurate since the emission of the night sky was investigated by various other authors including the writers of the present note before Moroz carried out his work.

SUBMITTED: May 6, 1960

Card 1/1

S/169/63/000/002/016/127
D263/D307

AUTHORS: Bol'shakova, L. G. and Osherovich, A. L.

TITLE: Systematic errors in filter ozonometry

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 2, 1963, 14, abstract 2B110 (In collection: Atmosfern. ozon, M., Mosk. un-t, 1961, 65-71 (summary in Eng.))

TEXT: The problem is discussed of systematic errors caused by the fact that the transmission band width of the filters is finite. It was shown that the error in the determination of overall ozone content depends on the bandwidth of light transmitted through the filter, and on the conditions of photometering.It was established that the best results are obtained with filters in which the half-width of transmitted band did not exceed 100 Å; the most suitable region of the spectrum is 3100 - 3300 Å. [Abstracter's note: Complete translation.]

Card 1/1

S/081/63/000/004/011/051
B193/B180

AUTHORS: Osherovich, A. L., Rodionov, S. F.

TITLE: Some types of photoelectric ozonometer

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 4, 1963, 166, abstract 4D45 (In collection: Atmosfern. ozon. M., Mosk. unt, 1961, 72 - 81 [summary in Eng.])

TEXT: Two types of photoelectric ozonometer are described. An integral device with light filters is proposed for operation in a wide ozonometric network. Interference light filters with dielectric coating are used to separate the narrow band of the spectrum in the wavelength region 3100 - 3300 Å, and in certain cases 4000 - 4500 Å. The block diagram of the device consists of a photomultiplier ФЭУ-11 (FEU-11) (or ФЭУ-18 (FEU-18)) and an amplifier (a differential cathode follower is used to reduce zero drift; at a current gain of $5 \cdot 10^4$ the zero drift in three hours was $\leq 2\mu a$). The second, observatory type, device is a three-channel ozonograph with diffraction gratings. The device consists of a coelostat for maintaining a fixed image of the sun, duplex monochromator with diffraction gratings

Card 1/2

S/081/63/000/004/011/051
B193/B160

Some types of photoelectric ozonometer

and fixed slots for separating the three parts of the spectrum (the linear dispersion at the outlet of the spectral system is 12.3, 7.8 and 7.3 Å/mm for wavelengths 3100, 3300 and 4358 Å respectively), and an electrophotometer with a 3-dot recorder. Animportant feature of the new device is the combination of high spectral resolution with high sensitivity, low inertia and objective recording. Due to these properties it can be used to measure small radiation amounts in rapidly varying conditions. [Abstracter's note: Complete translation.]

Card 2/2

S/120/62/000/001/036/061
E192/E382

24.6210

AUTHORS: Osherovich, A.L., Glukhovskiy, B.M. and Shpakov, N.S.

TITLE: Influence of temperature on the spectral sensitivity of photomultipliers

PERIODICAL: Pribory i tekhnika eksperimenta, no. 1, 1962, 149 - 154

TEXT: The temperature stability of the spectral sensitivity of photomultipliers is of importance when the multipliers are used in measuring equipment. This effect was therefore investigated experimentally for several types of tube. The investigated tube was mounted in a special, hermetically-sealed metal envelope, whose internal volume was kept dry by means of silica gel. The envelope together with a dewar flask were immersed in liquid air. The temperature of the photocathode of the tube was measured by thermocouples. In the case of the cathodes deposited on a solid metal base the thermocouples were soldered to the photocathode and the first emitter. In the tubes with semi-transparent cathodes the thermocouples were fixed on the outside surface of the bulb. The cooling rate of the photo-

Card 1/4

cathode could be varied between 20 and 120 °C/h. The same metal envelope was employed when investigating the photomultipliers at temperatures from +20 to +100 °C but it could be heated electrically. The same photomultiplier tube was investigated under photomultiplier conditions as well as photo-element in order to evaluate the effect of temperature on the sensitivity of the cathode and the system of emitters. In the latter case, the first three emitters were connected together and were used as the anode. A special photomultiplier with a dewar flask was also constructed so that the temperature of the cathodes could be changed without varying the thermal operating conditions of the emitters. For each type of photomultiplier the spectral sensitivity ε_λ was plotted as a function of the wavelength of the light illuminating the cathode. The following photomultipliers were investigated: 1) systems with Sb-Cs photocathodes deposited on a thick metal base, semi-transparent photocathodes on a chromium film and semi-transparent cathodes on glass; 2) systems with oxygen-caesium cathodes deposited

Influence of temperature ....

on a metal base and semi-transparent cathodes on glass;
3) semi-transparent systems with Bi-Ag-Cs cathodes, and
4) semi-transparent multi-alkaline (Sb-K-Na-Cs) cathodes.
The measurements showed that the spectral characteristics of the same type of photomultiplier do not fully coincide but that the temperature influence on the sensitivity of a given type is qualitatively the same. A typical spectral-sensitivity curve is given in Fig. 2a. This is taken for the multiplier, type ФЭУ-17 (FEU-17) for the following conditions:
curve 1 - for $t = +17\ ^{o}C$; curve 2 - for $t = +91\ ^{o}C$;
curve 3 - photocathode only and for $t = 17\ ^{o}C$;
curve 4 - for the tube and the photocathode at $t = -183\ ^{o}C$.
It is seen from the curves that cooling and heating of the tube produce a decrease in the spectral sensitivity at all the measured wavelengths; however, when the tube is cooled to $-183\ ^{o}C$ a second maximum is observed in the vicinity of 5500 A. The results of the measurements on the other types of tubes are illustrated in similar graphs. The effect of cooling on the

Card 3/5

Influence of temperature ....

signal-noise ratio of the tubes was also measured by using a monochromatic light signal source.
The authors thank S.F. Rodionov for discussing the results.
There are 7 figures and 1 table.

ASSOCIATION: Leningradskiy gosudarstvennyy universitet
(Leningrad State University)

SUBMITTED: June 20, 1960

Card 4/5

APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

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S/560/62/000/014/005/011
A001/A101

3.5700
2.4170

AUTHORS: Osherovich, A. L., Rodionov, S. F.

TITLE: On some parameters of modern telephotometric systems

SOURCE: Akademiya nauk SSSR. Iskusstvennyye sputniki Zemli. no. 14, 1962, 69 - 73

TEXT: Various types of telephotometers are used in studies of the spectral albedo of the Earth's surface and planets. Telephotometers use photomultipliers as receivers of radiation. The time constant of the device output circuit is 10^{-6} - 10^{-7} sec and integrated sensitivity is high, which features are advantageous in this type of receivers. The characteristics of cathodes in photoelectric amplifiers are shown in Table 1. The optical characteristic of these amplifiers remains linear up to constant currents of 10^{-5} - 10^{-6} amp. The spectral sensitivity of photomultipliers depends on temperature. There are several types of amplifying and recording units in telephotometers: 1) D—c. amplifiers can measure optical signals down to 10^{-14} w with an accuracy up to 1%; 2) A—c. amplifiers have the sensitivity threshold of 10^{-14} w with an accuracy of 2%;

Card 1/3

S/560/62/000/014/005/011
A001/A101

On some parameters of modern telephotometric system

3) Telephotometers with photon counters have sensitivity threshold of 5×10^{-16} w with an accuracy of 3 - 5%; 4) The circuit (Bote, Bote and Geiger) which integrates pulses by means of a capacitor have sensitivity threshold of 5×10^{-15} w with an accuracy of 3 - 5%. The systemswith photon counters can be employed only in cases of relatively low dark background when the number of dark pulses does not exceed 50 - 200 pulse/sec. There are 3 figures and 2 tables.

SUBMITTED: February 26, 1962

Card 2/3

On some parameters of modern telephotometric systems

S/560/62/000/014/005/011
A001/A101

Table 1. Characteristics of photocathodes

Type of cathode		λ_{max}, μ	λ_0 red edge, μ	γ_{max} (2640°K) amp.lm^{-1}	ϵ_{max}, %	I_T, 10^{-16} amp.cm^{-2}
(Ag)Cs_2OCsAg		0.85	1.2-1.4	30	1	10^3-10
(Ag)Ag_2ORb		-	0.95	6 - 10	-	-
BiAgOCs		0.45	0.75	60-90	10	10^2
Fused cathodes	Cs_3Sb	0.4	0.62	60-90	20	10^2-10
	Li_3Sb	-	0.57	5-20	-	1
	Cs_3Bi	-	0.8	8-25	-	-
	K_3Sb	0.35	0.5	-	7	-
	Na_3Sb	0.27	0.37	-	2	-
Multialkaline cathodes	Na_3SbNa	-	0.42	1	-	-
	K_3SbK	-	0.55	5	-	-
	Na_2KSb	0.37	0.65	50-60	25	1
	Na_2KSb	0.40	0.85	180-230	35	1
	SbTe	0.31	0.4	-	10	1

Card 3/3

L 34211-65 EWG(j)/EWT(l)/EWT(m)/EPF(c)/EWG(v)/EWG(n)EEC-4/EPR/EEC(t)/EWP(t)/EWP(b)/EWA(h) Po-4/Pe-5/Pq-4/Pr-4/Pa-4/Pae-2/Pt-10/Peb/Pi-4 IJP(c) JD/GW

ACCESSION NR: AP5005193 S/0203/65/005/001/0113/0120

AUTHOR: Veroiaynen, Ya. F.; Osherovich, A.L.; Suslov, A.K.; Shpakov, N.S.

TITLE: Observations of the ozone content during the total solar eclipse of 20 July 1963

SOURCE: Geomagnetism i aeronomiya, v. 5, no. 1, 1965, 113-120

TOPIC TAGS: upper atmosphere, ozone, solar eclipse, Hartley band, solar ultraviolet radiation, ozonometer

ABSTRACT: This article describes apparatus for the observation of direct and scattered solar ultraviolet radiation in the Hartley bands. This apparatus was used in observations of the total solar eclipse of 20 July 1963. The authors

L 34911-65

ACCESSION NR: AP5005193

second station, there was an identical single-channel ozonometer for measurement of the radiation scattered near the zenith. The ozonometers were attached to pilot-ballon theodolites, making it possible to point the instruments at the center of the solar disk. The radiation detectors were antimony-cesium end-window photomultipliers. An electrical circuit of the ozonometer is given, but there is little description of the instrument. The eclipse was total at the first station but only partial at the second. The formulas used in determining ozone content are cited. It is demonstrated clearly that there was an ozone [illegible] total but none where it was partial. The

tion of the investigation.

Card 2/ 3

L 34911-65
ACCESSION NR: AP5005193

ASSOCIATION: Fizicheskiy institut, Leningradskiy gosudarstvennyy universitet (Physics Institute, Leningrad State University)

SUB CODE: AA

L 2792-66 FSS-2/EWT(l)/EWT(m)/FS(v)-3/EPF(c)/EEC(k)-2/EWA(d)/EWP(t)/EWP(b)
ACCESSION NR: AP5021355 LJP(c) JD/TT/GW UR/0120/65/000/004/0171/0174
551.508.552

AUTHOR: Bol'shakova, L. G.; Osherovich, A. L.; Rodionov, S. F.; Suslov, A. K.; Shpakov, N. S.

TITLE: Photoelectric ozonometers for studying vertical ozone distribution

SOURCE: Pribory i tekhnika eksperimenta, no. 4, 1965, 171-174

TOPIC TAGS: ozonometer, photoelectric ozonometer, ozone distribution

ABSTRACT: Two types of photoelectric ozonometers are compared, one with an orientation system and the other with a gypsum scattering screen. The system used in the sun-oriented ozonometer permitted it to be trained on the sun with an accuracy of ±5'. The ozonometer had two independent amplifier channels, for λ_1 = 3100 Å and λ_2 = 3300 Å; signals from each channel were mechanically switched to a recorder. Monochromatic filters were used to increase measurement accuracy. The cesium-antimony phototubes had a spectral sensitivity limit of ~6500 Å, which eliminated the effect of the second maximum of filter transmission at λ = 7200 Å. The advantage of the screen-type ozonometer developed by the authors is that it needs no orientation system. It was found that a 5° nonperpendicularity of the screen to the opti-

Card 1/2

L 2792-66

ACCESSION NR: AP5021355

6

cal axis and a 20° deviation of the ozonometer from the vertical had no effect on the ratios of signal intensities I_1/I_2. In tests conducted at Karadag (Crimea) and Elbrus, direct and scattered radiation was measured almost simultaneously in the same ozonometer at various values of Z_0. Results on ozone distribution agree with those in the literature cited. This ozonometer is considered to be reliable and virtually unaffected by atmospheric conditions. Orig. art. has: 7 figures, 1 table, and 2 formulas. [TS]

ASSOCIATION: Leningradskiy gosudarstvennyy universitet (Leningrad State University)

SUBMITTED: 11Jan64 ENCL: 00 SUB CODE: ES, EC

NO REF SOV: 007 OTHER: 005 ATD PRESS: 4103

BVK

Card 2/2

OSHER... [illegible] ...; ...AYKEN, Yu.F.

...servation of cascade transitions due to electr... ...itation of cadmium. Dokl. AN SSSR 164 no.5:1022-1023 O '65. (MIRA 18:10)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova. Submitted February ..., 1965.

L 42904-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6018433 SOURCE CODE: UR/0051/66/020/006/0929/0935

AUTHOR: Verolaynen, Ya. F.; Osherovich, A. L.

ORG: none

TITLE: Lifetimes of some levels of Hg and Cd

SOURCE: Optika i spektroskopiya, v. 20, no. 6, 1966, 929-935

TOPIC TAGS: nanosecond pulse, electron gun, photomultiplier, excitation spectrum, electron energy level

ABSTRACT: Lifetimes of certain levels of Hg and Cd were measured in the interval of 8-12 nsec by the method of delayed coincidences. An electron gun with an oxide cathode was used for the excitation of Hg and Cd atoms. A container with the electron gun and a Hg or Cd ampoule were placed in an electric furnace. The measurements were performed at a pressure of $(1-5)\cdot10^{-3}$ mm Hg. The oscillator was connected to the first grid of the electron gun through a transformer. The cutoff voltage was fed to the same grid through the secondary coil of the transformer. The pulse rate was 10^4 cps with a pulse duration of 10 nsec and 2 nsec decay time. Energy scattering of the exciting electrons was 0.4-0.45 ev. The Hg or Cd atoms were excited in the equipotential space between the second grid and the anode of the electron gun. The resolving time of the dual coincidences was controlled in the 1.5 to 9 nsec range. The radia-

UDC: 539.184:546.49 + 546.48

Card 1/2

L 42904-66

ACC NR: AP6018433

tion of the investigated atoms was registered by photomultipliers with Sb-Cs cathodes. The measured mean lifetime of the upper levels of Hg is 69.2±2.0 nsec. The measured lifetimes of levels $6^3 D_3$ and $5^3 F_4$ are 8±6 and 104±5 nsec, respectively. Lifetimes of the levels (as computed by the authors) are presented in tabular form and compared with contradictory data of other authors. The accuracy of the authors' measurements was 8-9%. The authors thank L. G. Rubinov for assistance in carrying out the measurements. Orig. art. has: 3 tables, 4 figures, 2 formulas.

SUB CODE: 20/09/ SUBM DATE: 25Jun65/ ORIG REF: 009/ OTH REF: 011

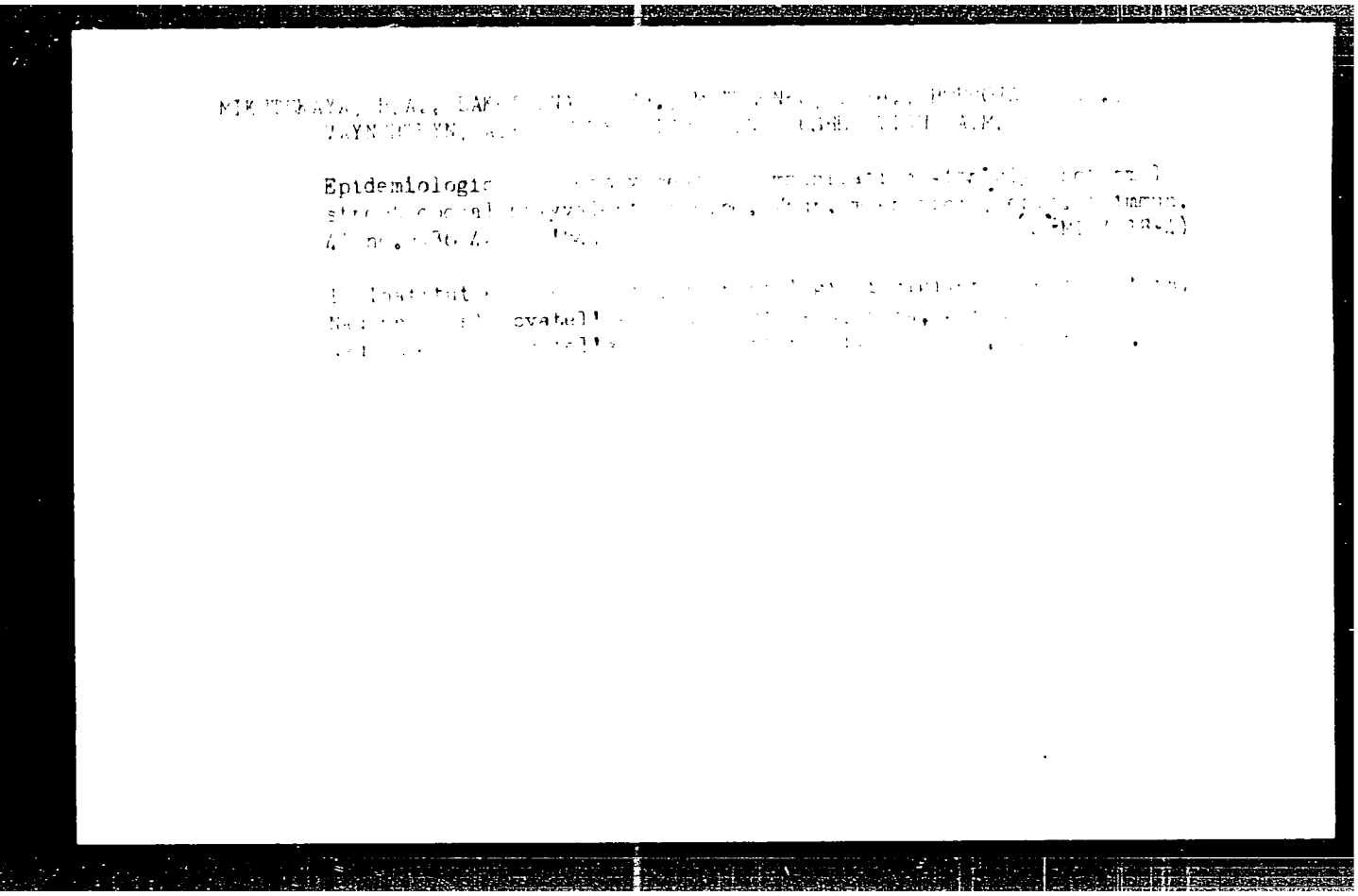
Card 2/2

NOSOV, S.D., prof.; LADODO, K.S., kand.med.nauk; KUZ'MINSKAYA, G.Ya.; NIKOLAYEVSKIY, G.P.; ITSKLIS, F.G.; VINTOVSKINA, I.S.; KAGANOVICH, N.I., ZHUKOVA, L.D.; MIL'NER, B.I.; OSHKROVICH, A.M. PILATSKAYA, Ye.P.

Clinical epidemiological characteristics of certain viral infections in children's institutions. Pediatriia 39 no.4:6-13 Ap '61. (MIRA 14:4)

1. Iz otdela detskikh infektsii (zav. - prof. S.D. Nosov) Instituta pediatrii AMN SSSR i epidemiologicheskogo otdela (zav. - S.A. Samvelova) Moskovskoy gorodskoy sanitarno-epidemiologicheskoy stantsii.

(VIRUS DISEASES)



Epidemiologic

OSHEROVICH, D.L.

Centralization of the delivery of blood and its components in the medical institutions of Leningrad. Akt.vop.perel.krovi no.7:40-43 '59. (MIRA 13:1)

1. Leningradskaya gorodskaya stantsiya perelivaniya krovi.
(LENINGRAD--BLOOD--COLLECTION AND PRESERVATION)

PROZOROVSKIY, V.I., prof.; OSHEROVICH, E.Ya.

Participation of forensic medicine in solving Soviet public health problems. Sov.zdrav. 17 no.2:42-46 F '58. (MIRA 13:1)

1. Iz Nauchno-issledovatel'skogo instituta sudebnoy meditsiny Ministerstva zdravookhraneniya SSSR.

(PUBLIC HEALTH
role of legal med. serv. in Russia (Rus))
(MEDICINE, LEGAL
in solving pub. health problems in Russia (Rus))

MARKOV, Vladimir Vasil'yevich; ALEKSANDROVA, A.A., red., OSHEROVICH,L.G., retsenzent; KALABEKOV,B A.,retsenzent; ALEKSANDROVA,A.A.,red.; BELYAYEVA,V.V.,tekhn.red.

[Radio relay lines with a limited number of channels] Malokanal'nye radioreleinye linii sviazi. Moskva, "Sovetskoe radio," 1963. 704 p. (MIRA 17:2)

OSHEROVICH, L. I.

Dissertation: "Resistance of Wood to Tension Across the Grain." Cand Tech Sci, Belorussian Polytechnic Inst, Minsk, 1954. (Referativnyy Zhurnal--Mekhanika, Moscow, Jun 54)

SO: SUM 318, 23 Dec. 1954

OSHEROVICH, L.I.

Tension test of wood perpendicular to grain. Zav.lab.21 no.11: 1374-1377 '55. (MLRA 9:2)

1.Belorusskiy lesotekhnicheskiy institut imeni S.M.Kirova.
(Wood--Testing)

124-1957-10-12280

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 10, p 149 (USSR)

AUTHOR: Osherovich, L. I.

TITLE: The Influence of Humidity on the Magnitude of Tensile Strength and Modulus of Elasticity of Wood Subjected to Tension Across the Fibres (Vliyaniye vlazhnosti na velichinu predela prochnosti i modulya uprugosti pri rastyazhenii drevesiny poperek volokon)

PERIODICAL: Sb. nauch. rabot. Belorus. politekhn. in-t, 1956, Nr 54, pp 167-172

ABSTRACT: A description is offered of tests of pine specimens of different humidity having a working section 40 mm long with a constant cross-section of 10 x 30 mm with transition fairings to the grips at either end. The problem of the correction coefficient for the effect of humidity was investigated.

Yu. M. Ivanov

Card 1/1

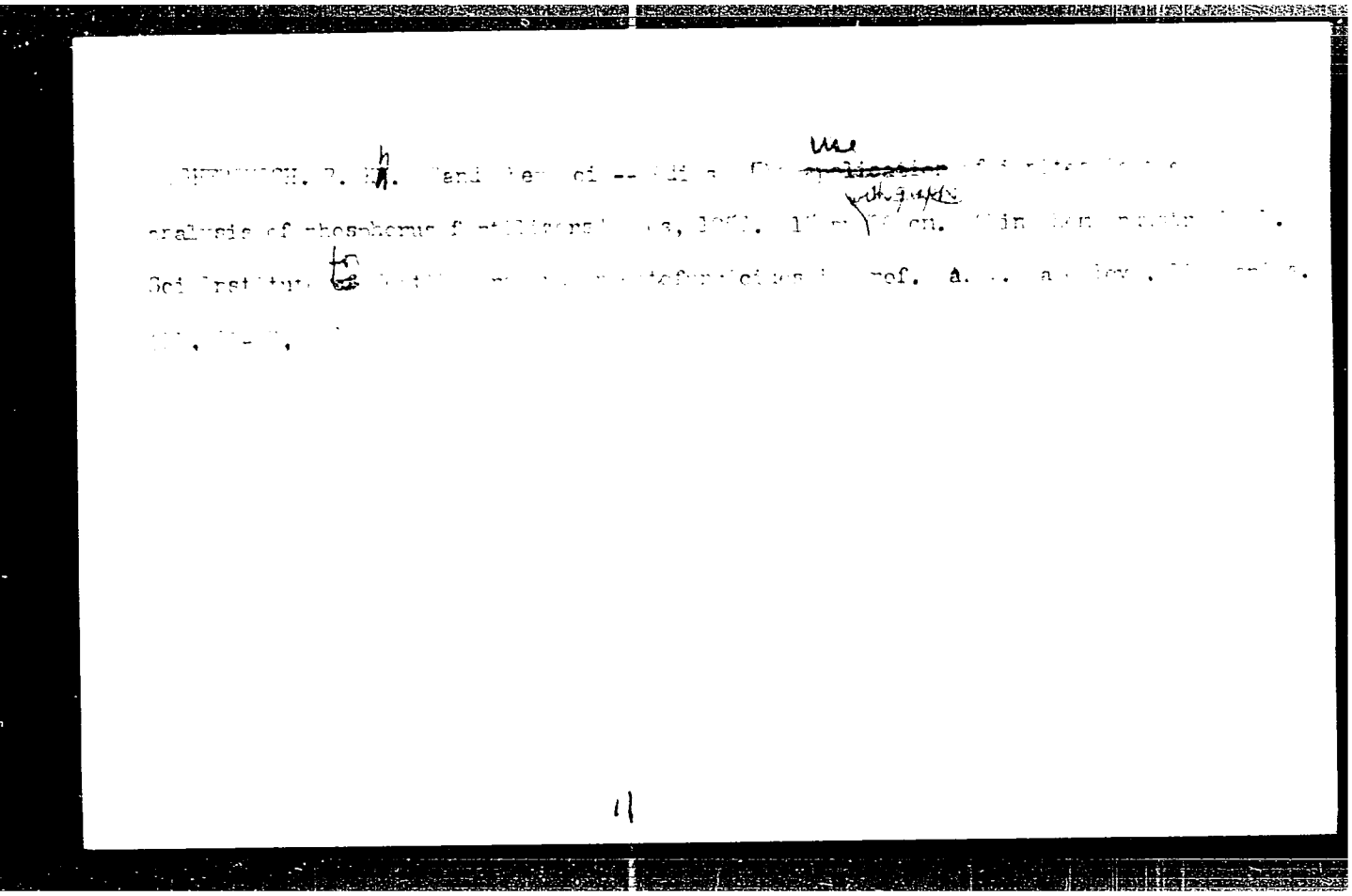
RUDITSYN, Mikhail Nikolayevich, dots.; LAPTEV, Vladimir Pavlovich, starshiy prepodavatel'; RUD', Boris Viktorovich, assistent; KUROVSKIY, Ivan Frantsevich, starshiy prepodavatel'; LYUBOSHITS', Moisey Il'ich, dotsent; PETROVICH, Aleksandr Grigor'yevich, starshiy prepodavatel'; BALYKIN, Mikhail Kirillovich, assistent, PEN'KEVICH, Vladimir Aleksandrovich, assistent; OSHEROVICH, Lyubov' Il'inichna, dotsent; CHULITSKIY, Vyacheslav Ivanovich, assistent; Prinimal uchastiye SIKOLOVSKIY, A.V., KAPRANOVA, N.V., red.; PESINA, S.A., tekhn.red.

[Laboratory work on the strength of materials]Laboratornye raboty po soprotivleniiu materialov. Minsk, Izd-vo M-va vysshego, srednego spetsial'nogo i professional'nogo obrazovaniia BSSR, 1961. 272 p. (Strength of materials--Testing) (MIRA 15:8)

LAPIDUS, B.V.; POLTAVSKIY, V.T.; RYBAK, G.D.; OSHEROVICH, M.D.; KANAATOV, S.; GELEVEY, A.M.; KUDINA, Z.A.; STANKEVICH, M.P.; PRITULYAK, O.M.

[National economy of the Kirghiz S.S.R. in 1963; a statistical yearbook] Narodnoe khoziaistvo Kirgizskoi SSR v 1963 godu; statisticheskii ezhegodnik. Frunze, Statistika, 1964. 237 p. (MIRA 18:6)

1. Tsentral'noye statisticheskoye upravleniye pri Sovete Ministrov Kirgizskoy SSR.



L 04980-67 EWT(1) RO
ACC NR: AP6031060 (N) SOURCE CODE: UR/0394/66/004/009/0068/0069

16
B

AUTHOR: Osherovich, R. Kh.

ORG: Scientific Institute for Fertilizers and Insecticides-Fungicides im. Ya. V. Samoylov (Nauchnyy institut po udobreniyam i insektofungitsidam)

TITLE: Rapid methods of analyzing phosphate fertilizers

SOURCE: Khimiya v sel'skom khozyaystve, v. 4, no. 9, 1966, 68-69

TOPIC TAGS: phosphate fertilizer analysis, volumetric method, colorimetric method, cation exchange resin

ABSTRACT: The proposed volumetric and photocolorimetric methods for quantitative determination of total, acid soluble, and water soluble P_2O_5 in superphosphates, ammophos, diammonium phosphate, phosphorites, apatite, and phosphoric acid are based on the use of cation-exchange resins (N-sulfougol and N-Ku-2) to convert the phosphates into phosphoric acid:

$$2[R]H + CaSO_4 \rightleftarrows [R_2]Ca + H_2SO_4$$
$$2[R]H + CaHPO_4 \rightleftarrows [R]Ca + H_3PO_4$$
$$3[R]H + MePO_4 \rightleftarrows [R_3]Me + H_3PO_4$$

In the volumetric method, one aliquot of the solutions after treatment with the cation-exchange resin, is titrated with NaOH solution to pH 4.6 and another aliquot

Card 1/2 UDC: 631.42+631.85

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ACC NR: AP6031060

is titrated to pH 9.0. The amount of phosphoric acid is calculated from the difference in the readings of the two titrations. In the photocolorimetric method, the solution after treatment with the cation-exchange resin, is treated with the known molybdenum-vanadium reagent and the intensity of the yellow phosphorus-molybdenum-vanadium couples, which is proportional to the amount of phosphorus present, is measured on a photocolorimeter. The determination time varied between 45 min and 3 hr for a single determination. The accuracy of the methods is not given. The effect of fluorine compounds on the determination of P_2O_5 in fertilizers is discussed. [PS]

SUB CODE: 07/ SUBM DATE: 09Jun65/ ORIG REF: 002/ OTH REF: 004/

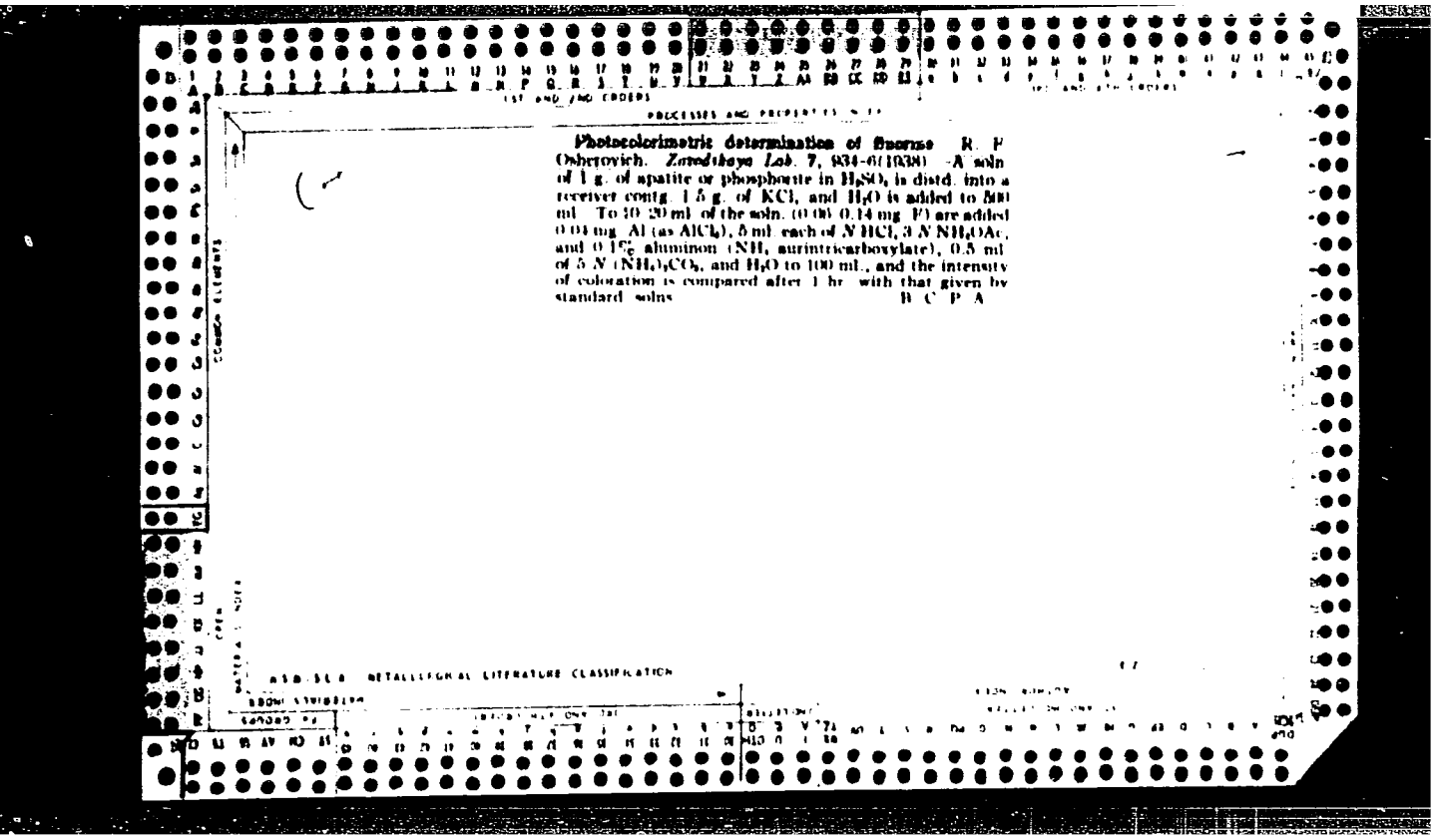
Card 2/2

KEL'MAN, Faina Natanovna; BRUTSKUS, Yelena Borisovna; OSHEROVICH, Rakhil' Khaymovna. Prinimali uchastiye: GERBURT, Ye.V.; MIKHAYL'CHUK, B.V.; SHPAK, Ye.G., tekhn. red.

[Methods of analysis in the control of the production of sulfuric acid and phosphorous fertilizers] Metody analiza pri kontrole proizvodstva sernoi kisloty i fosfornykh udobrenii. Moskva, Goskhimizdat, 1963. 351 p. (MIRA 17:2)

KEL'MAN, Faina Natanovna; BRUTSKUS, Yelena Borisovna; OSHEROVICH, [illegible] Khaimovna; MIKHAL'CHUK, B.V., red.; ODEREERG, [illegible], red.

[Analysis methods in the production control of sulfuric acid and phosphorous fertilizers] Metody analiza pri kontrole proizvodstva sernoi kisloty i fosfornykh udobrenii. Moskva, Khimiia, 1965. [illegible] p. (MIRA 18:12)



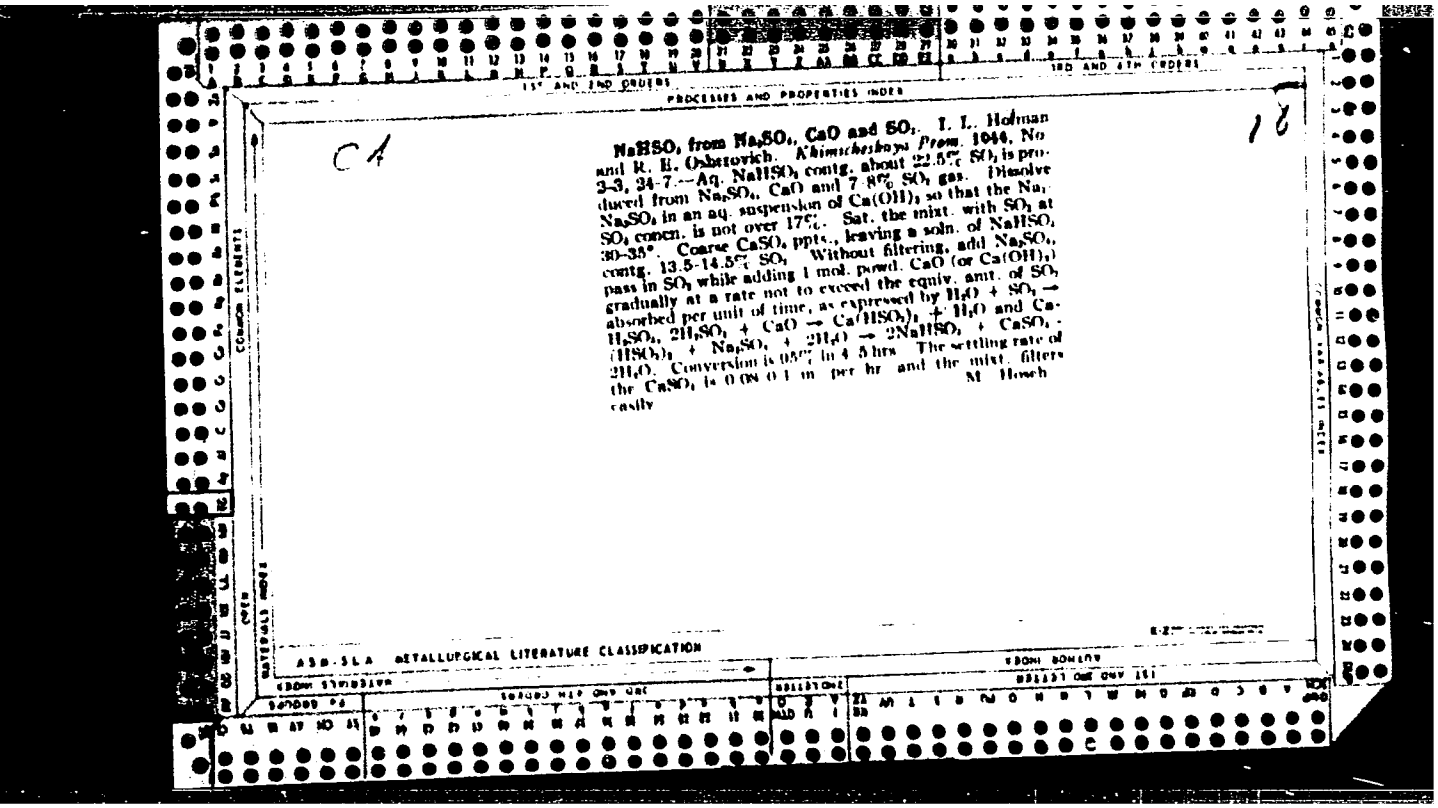
Photocolorimetric determination of fluorine R. P. Obbrovich. *Zavodskaya Lab.* 7, 934-6(1938).—A soln. of 1 g. of apatite or phosphorite in H_2SO_4 is distd. into a receiver contg. 1.5 g. of KCl, and H_2O is added to 300 ml. To 10–20 ml. of the soln. (0.08–0.14 mg. F) are added 0.01 mg. Al (as $AlCl_3$), 5 ml. each of *N* HCl, 3 *N* NH_4OAc, and 0.1% aluminon (NH_4 aurintricarboxylate), 0.5 ml. of 5 *N* $(NH_4)_2CO_3$, and H_2O to 100 ml., and the intensity of coloration is compared after 1 hr. with that given by standard solns. B. C. P. A.

PROCESSES AND PROPERTIES INDEX

CA

Photocolorimetric determination of nitrogen trioxide in the production of sulfuric acid. B. V. Mikhal'chuk and R. E. Osherovich. *Zavodskaya Lab.* 9, 898 8(1940). The detn. is based on Lombard's method (C. A. 7, 2935) and involves the diazotization of sulfanilic acid and the formation of tropeolin. Dil. 2 ml. of the acid to 250 ml. with water and use 10 ml. for analysis. Dil. the 10 ml. with water to 50 ml. and add 1 ml. of a soln. prepd. by dissolving 1 g. of sulfanilic acid in 100 ml. of satd. NH_4Cl soln. and adding 1.5 g. PhOH and 100 ml. of 2 N HCl. Allow to stand for 15 min. and add 0.5 ml. of a soln. prepd. by mixing 208 ml. of 10% NH_3 with 80.6 g. of citric acid and dilg. with water to 500 ml. Add NH_3 until a stable yellow color is obtained and then compare in the photocolorimeter. The detn. is not affected by SO_2, SiO_2, Se, Al_2O_3 and As. The results are decreased when the concn. of H_2SO_4 is over 0.54 g./100 ml. of soln. In detg. small amts. (0.003-0.004%) of N it is necessary to take not less than 0.5 ml. of acid and this lowers the results by 6% but the error can be compensated by adding to the standard soln. 0.5 ml. of pure H_2SO_4 (1.7-1.75). Analysis should be made not later than 1.5-2 hrs. after the H_2SO_4 had been prepd. B. Z. K.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



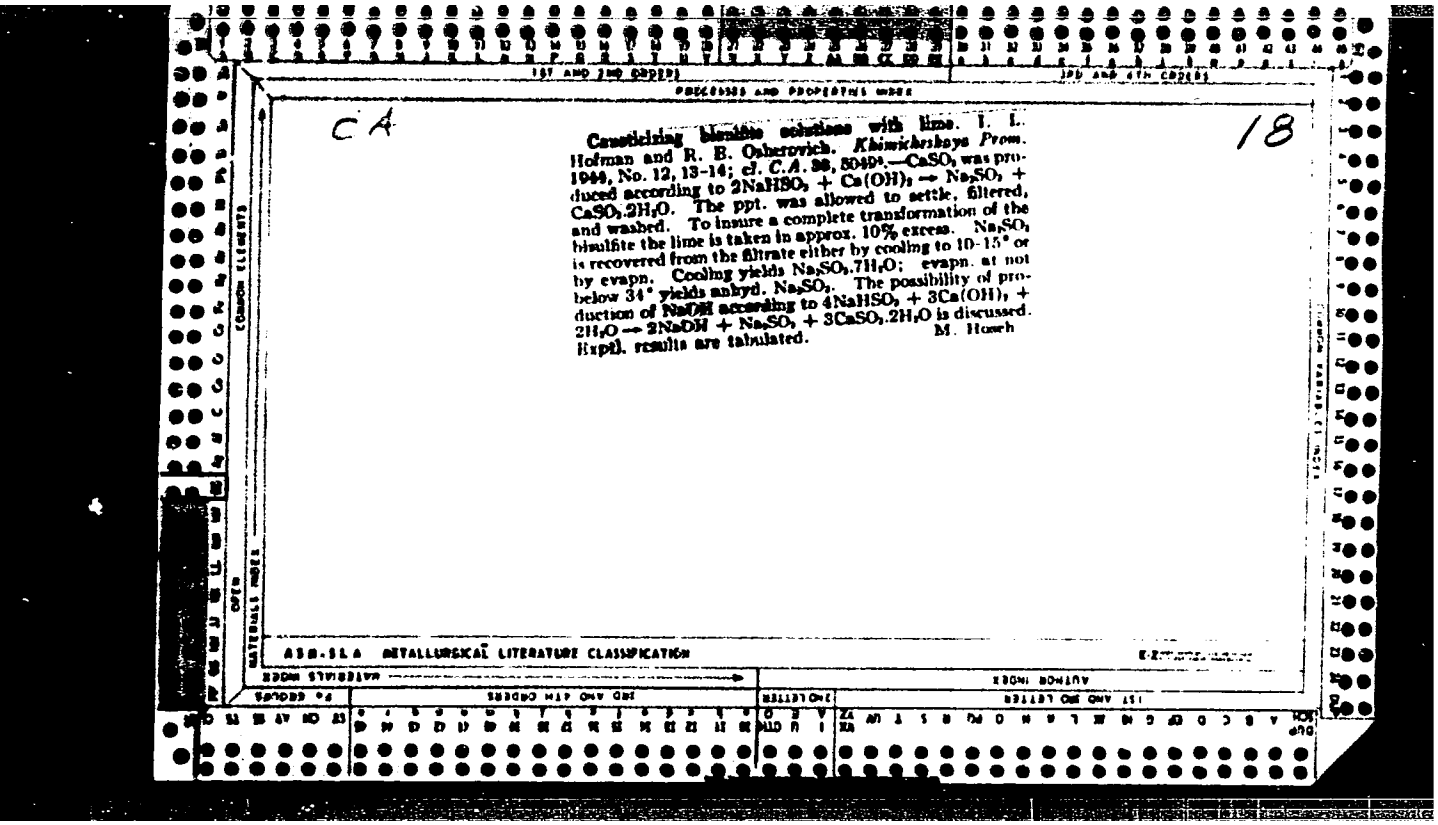
PROCESSES AND PROPERTIES INDEX

C1

$NaHSO_3$ from Na_2SO_4, CaO and SO_2. I. L. Hofman and R. E. Oshtrovich. *Khimicheskaya Prom.* 1946, No 3-3, 34-7.—Aq. $NaHSO_3$ contg. about 22.5% SO_2 is produced from Na_2SO_4, CaO and 7.8% SO_2 gas. Dissolve Na_2SO_4 in an aq. suspension of $Ca(OH)_2$ so that the Na_2SO_4 concn. is not over 17%. Sat. the mixt. with SO_2 at 30–35°. Coarse $CaSO_3$ ppts., leaving a soln. of $NaHSO_3$ contg. 13.5-14.5% SO_2. Without filtering, add Na_2SO_4, pass in SO_2 while adding 1 mol. powd. CaO (or $Ca(OH)_2$) gradually at a rate not to exceed the equiv. amt. of SO_2 absorbed per unit of time, as expressed by $H_2O + SO_2 \rightarrow H_2SO_3$, $2H_2SO_3 + CaO \rightarrow Ca(HSO_3)_2 + H_2O$ and $Ca(HSO_3)_2 + Na_2SO_4 + 2H_2O \rightarrow 2NaHSO_3 + CaSO_3 \cdot 2H_2O$. Conversion is 95% in 4.5 hrs. The settling rate of the $CaSO_3$ is 0.08-0.1 m. per hr. and the mixt. filters easily. M. Hoseh

18

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

18

Causticizing bisulfite solutions with lime. I. L. Hofman and R. B. Osherovich. *Khimicheskaya Prom.* 1944, No. 12, 13–14; cf. *C.A.* **39**, 5049⁴.—$CaSO_3$ was produced according to $2NaHSO_3 + Ca(OH)_2 \rightarrow Na_2SO_3 + CaSO_3.2H_2O$. The ppt. was allowed to settle, filtered, and washed. To insure a complete transformation of the bisulfite the lime is taken in approx. 10% excess. Na_2SO_3 is recovered from the filtrate either by cooling to 10–15° or by evapn. Cooling yields $Na_2SO_3.7H_2O$; evapn. at not below 34° yields anhyd. Na_2SO_3. The possibility of production of NaOH according to $4NaHSO_3 + 3Ca(OH)_2 + 2H_2O \rightarrow 2NaOH + Na_2SO_3 + 3CaSO_3.2H_2O$ is discussed. Expt'l. results are tabulated.

M. Hoseh

USSR/Chemistry - Sulfur dioxide Jun 49
Chemistry - Gases

"Phototurbidimetric Method of Detecting SO_2 in the Presence of Nitric Oxides," R. E. Osherovich, G. V. Rabovskiy, Sci Inst of Fertilizers and Insectofungicides, 3 pp

"Zavod Lab" Vol XV, No 6, 756-3

Describes rapid method to determine SO_2 in the presence of nitrogen oxides. Method involves titration at maximum turbidity. Shows method can also be used to analyze nitrogenated gases. Determined that, for a 0.14 - 1.2% SO_2 mixture, [redacted] 58/49T40

USSR/Chemistry - Sulfur Dioxide (Contd) Jun 49

values obtained by turbidity method differed by ±0.04% absolute from the weight determination method. Process is completed within 5 minutes.

58/49T40

OSHEROVICH, R. [redacted]

58/49T40

AMELIN, A.G.; BALEYEV, A.V.[deceased]; BRUTSKUS, Ye.B.; KEL'MAN, F.N.; OSHEROVICH, R.Ye.; STEPANOV, M.N.; CHEPELEVETSKIY, M.L.; CHERNOBAYEVA, M.M.; MIKHAL'CHUK, B.V., redaktor; LEONT'YEVA, K.D., redaktor; SHPAK, Ye.G., tekhnicheskiy redaktor.

[Methods of analyzing and controlling the production of sulfuric acid and superphosphates] Metody analiza i kontrolia proizvodstva sernoi kisloty i superfosfata. Sost. A.G.Amelin i dr. Pod red. B.V.Mikhal'chuka. Moskva, Gos.nauchno-tekhn. izd-vo khim. lit-ry, 1955. 159 p. (MLRA 9:5)

1.Moscow. Nauchnyy institut po udobreniyam i insektofungisidam.
(Sulphuric acid) (Phosphates)

OSHEROVICH, R.Ye.; KAPLAN, A.I.

Development of a rapid method for determining B_2O_3 in boron ores. [Trudy] NIUIF no.164:45-46 '59. (MIRA 15:5)
(Boron oxides)

OSHEROVICH, R.Ye.; ANDREYEVA, N.G.

Development of rapid methods for determining total and assimilable phosphoric acid in the precipitate and citric acid-soluble P_2O_5 in defluorinated phosphate with the aid of cationites. [Trudy] NIUIF no.164:48-50 '59. (MIRA 15:5)
(Phosphoric acid) (Ion exchange)

OSHEROVICH, R. Ye.

Determination of sodium metaphosphate in metaphosphoric acid.
Zav. lab. 28 no.12:1436 '62. (MIRA 16:1)

1. Nauchnyy institut po udobreniyam i insektofungisidam im.
Ya. V. Samoylova.

(Sodium metaphosphate) (Metaphosphoric acid)

GODUNOV, S.F., prof.; PROKOF'YEVA-MIKHAYLOVSKAYA, L.E., dotsent [deceased]; OSHEROVICH, V.Z., inzh.

Some problems of the biomechanics and treatment of foot deformities. Ortop., travm. i protez. 25 no.6:36-42 Je '64.

(MIRA 18:3)

1. Iz Leningradskogo instituta protezirovaniya (dir. - dotsent M.V. Strukov). Adres avtorov: Leningrad, prospekt Karla Marksa, d.9/12, Leningradskiy nauchno-issledovatel'skiy institut protezirovaniya.

OSHEROVICH, V.Z., inzhener

Prosthesis of short stumps of the forearm in U.S.A. Ortop., travm. protez. 17 no.5:72-73 S-O '56. (MLRA 10:1)
(PROSTHESIS
forearm in short amputation stimps)
(AMPUTATION STUMPS
short forearm stumps, fitting of prostheses)

OSHEROVICH, V.Z.

Determining anzular displacements of segments of the upper extremity by the coordinates of its joints. Biofizika 5 no. 5:595-598 '60. (MIRA 13:10)

1. Leningradskiy nauchno-issledovatel'skiy institut protezirovaniya. (ARM)

OSHEROVICH, V.Z.

Academician N.I.Muskhelishvili; on his 70th birthday. Inzh.fiz. zhur. 4 no.7:120-123 Jl '61. (MIRA 14:8)
(Muskhelishvili, Nikolai Ivanovich, 1891-)

22769

S/041/61/013/001/008/008
B112/B202

16.3000

AUTHOR: Osherovich, V. Z.

TITLE: On the problem of the conformal mapping of a circle onto a rectangular region

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, v. 13, no. 1, 1961, 111-117

TEXT: The author studies the conformal mapping of the unit circle onto the exterior and the interior of a rectangle. He proceeds from the Christoffel-Schwarz integral representation:

$$z = \omega_1(\zeta) = A_1 \int_{\zeta}^{\zeta} \sqrt{\zeta^4 - 2x_1\zeta^2 + 1}\,\frac{d\zeta}{\zeta^2} + B_1 \ldots,$$

$$z = \omega_2(\zeta) = A_2 \int_{\zeta}^{\zeta} \frac{d\zeta}{\sqrt{\zeta^4 - 2x_1\zeta^2 + 1}} + B_2 \ldots.$$

He sets up the following series expansions for the elliptical integrals:

Card 1/3

On the problem of the... S/041/61/013/001/008/008
B112/B202

$$z = \omega_1(\zeta) = -A_1\left(\frac{1}{\zeta} + \sum_{n=0}^{\infty} C_{2n+1}\zeta^{2n+1}\right) + B_1 \ldots\ldots$$

$$z = \omega_2(\zeta) = A_2 \sum_{n=0}^{\infty} D_{2n+1}\zeta^{2n+1} + B_2 \ldots\ldots$$

The coefficients D and C can be expressed by the Legendre polynomials $P_n(x)$: $D_{2n+1} = P_n/(2n+1)$, $C_{2n+1} = (P_{n+1} - P_{n-1})/(2n+1)^2$. Furthermore, the following inequalities hold: $D_{2n+1} < 1/(2n+1)$, $C_{2n+1} < 2/(2n+1)^2$ and the recursion relations: $(n+1)(2n+3)D_{2n+3} - (2n+1)^2 x D_{2n+1} + n(2n-1)D_{2n-1} = 0$, $(n+2)(2n+3)C_{2n+3} - (2n+1)^2 x C_{2n+1} + (n-1)(2n-1)C_{2n-1} = 0$. The author also studies the relation between the parameter $k = \sqrt{(1-x)/2}$ and the ratio of the sides a/b of the rectangle. He obtains: $a_2/b_2 = K(k')/K(k)$ with $(i/2)K(k) = \int_1^{e^i} \frac{d}{\sqrt{4-2x^2+1}}$, $(-1/2)K(k') = \int_i^{e^i} \frac{d}{\sqrt{4-2x^2+1}}$ and $a_1/b_1 = (E(k') - k^2K(k'))/(E(k) - k'^2K(k))$ with

Card 2/3

On the problem of the...

$4\left[E(k') - k^2K(k')\right] = \int_{e^{i\lambda}}^{e^{i(\pi-\lambda)}} \sqrt{\zeta^4-2x\zeta^2+1}\,\frac{d\zeta}{\zeta^2}$. The author also points out that N. N. Pavlovskiy interpreted the expression for a_1/b_1 in a different way. There are 4 Soviet-bloc references.

SUBMITTED: July 30, 1958

Card 3/3

OSHEROVICH, V.Z., inzh.

Nomogram for moments of inertia and moments of gyration of cylindrical bodies. Vest. mashinostr. 45 no.1:37-39 Ja '65. (MIRA 18:3)

OSHEROVICH, V.Z., inzh.

Faulty tables for calculating rolled and cold-bent angle steel. Vest.mashinostr. 45 no.10:44-46 O '65. (MIRA 18:11)

17(SOV/177-58-5-15/30

AUTHOR: Osherovskiy, Kh.M., Lieutenant-Colonel of the Medical Corps

TITLE: The Medical Kinetic System in a Climatic Sanitarium (O lechebno-dvigatel'nom rezhime v klimaticheskom sanatorii)

PERIODICAL: Voyenno-meditsinskiy zhurnal, 1958, Nr 5, pp 66 - 68 (USSR)

ABSTRACT: The author describes in detail 3 different kinds of sanitarium systems employed in the Yaltinskiy voyennyy sanatoriy (Yalta Military Sanitarium): 1) a system for creating optimal conditions for adaptation to the new climate; 2) a system for restoring and strengthening distrubed functions; 3) a system for training and hardening the organism and the maximum utilization of the climatic factors. The author states that active climatic therapy is not indicated in acute diseases, lesions of the cardio-

Card 1/2

The Medical Kinetic System in a Climatic Sanitarium

vascular system, stenocardia, bronchitic asthma, arteriosclerosis and sharply pronounced functional distrubances of the nervous system.

OSHEROVSKIY, Kh.M., podpolkovnik meditsinskoy sluzhby; POGUDIN, M.I., podpolkovnik meditsinskoy sluzhby

Studying gastric secretion. Voen.-med.zhur. no.10:73 O '59. (MIRA 13:3)

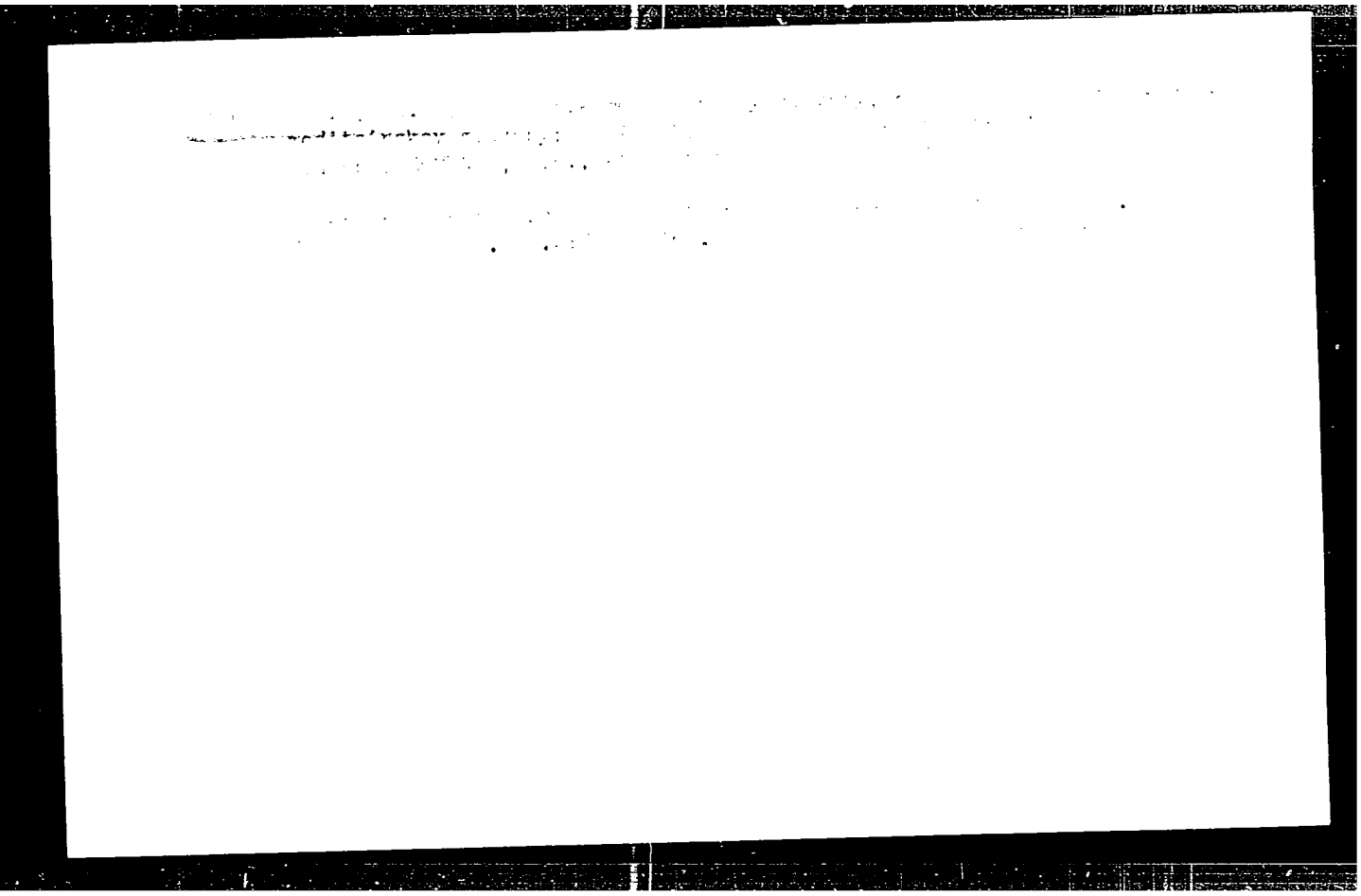
(STOMACH--SECRETIONS)

OSHEROVSKIY, Kh.M.; LATYSHEV, G.D.

Solar therapy during the cold season on the southern shore of the Crimea. Vop. kur. fizioter. i lech. fiz. kul't. 25 no. 3:208-211 My-Je '60. (MIRA 14:4)

1. Iz Yaltinskogo santoriya Ministerstva oborony SSSR (nach. Ye.I. Fedorov).

(CRIMEA--SUN BATHS)



APPROVED FOR RELEASE: Wednesday, June 21, 2000 CIA-RDP86-00513R001238

1. OSHEV, A. and STCHEPETKOV, A.

2. USSR (600)

4. Rye

7. Cleaning rye seed of ergot filaments. Sel.i sem. 19 no. 12, 1952.

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

OSHEV, A.V.; NAZAROVSKIY, B.N., red. izd-va; SUKMANOVA, K.G., tekhn. red.

[Lepidoptera of Perm Province; based on the collections of the museum]Cheshuekrylye Permskoi oblasti; po kollektsiiam muzeia. Perm', Permskii obl. kraevedcheskii muzei, 1961. 26 p. (MIRA 15:8)

(Perm Province--Lepidoptera)

FEDOROV, V.A.; OSHEVA, N.D.

Comparing the accuracy of photogrammetric crowding of the leveling network by the materials of spectrozonal and ordinary black-and-white aerial photography. Geod.i kart. no.5:28-30 My '61. (MIRA 14:6)

(Aerial photogrammetry)

OSHEVEROV, I.G.

137-58-5-10846

Translation from Referativnyy zhurnal Metallurgiya 1958, Nr 5 p 279 (USSR)

AUTHORS Burdov, A.I., Markman, N.Ye., Osheverov, I.G.

TITLE On the Suitability of BR.AZh 9-4 Bronze for Worm Drives of Draw Benches (K voprosu o rabotosposobnosti bronzy marki BR.AZh 9-4 v chervyachnykh peredachakh volochil nykh stanov)

PERIODICAL Sb nauchn. tr. Magnitogorskiy gorno-metallurg. in-t 1957 Nr 11, pp 249-259

ABSTRACT The results of shop tests at the Alma-Ata Machinery Plant of worm gear with toothed rims of AZh 9-4 bronze in 6 350 draw benches are presented. The results of the tests of the reduction gear showed that when BR.AZh 9-4 bronze is used in worm-type transmissions, no significant upward deviation in rate of slip from the values recommended in the literature is permissible.

M Z

1. Gears--Production 2. Bronze--Application

Card 1/1

OSHEVNEVA, N. V.

"Experience in Conformal Mapping of Cartographic Data"
Sbornik Statey po Kartografii, No 5, 1953, pp 41-42

Describes the use of conformal mapping method (suggested by A. V. Porodin at the Central Scientific Research Institute of Geodesy, Aerial Survey and Cartography) at the Omsk cartographic plant in the production of a USSR map at a 1:5,000,000 scale using a cylindrical perspective projection as suggested at the above institute. This method reduced the time of processing and improved the quality of maps. (RZhAstr, No 11, 1954.)

SO: W-31187, 8 Mar 55

SOV/124-59-4-3489

Translation from: Referativnyy zhurnal. Mekhanika, 1959, Nr 4, p 12 (USSR)

AUTHOR: Gulyayev, M.P. and Oshibayev, M.

TITLE: On the Stability of Rotation of a Heavy Solid Body With One Fixed Point for the Case of D.N. Goryachev and S.A. Chaplygin.

PERIODICAL: Tr. sektora matem. i mekhan. AS KazSSR, 1958, Vol 1, pp 144-146.

ABSTRACT: The authors investigate the stability of the permanent rotation of a solid body on a vertical axis with a distribution of mass that is the characteristic of the Goryachev-Chaplygin case. The note duplicates V.V. Rumyantsev's article (Prikl. matem. i mekhan., 1954, Vol 18, Nr 4, 457-458 - RZhMekh, 1955, Nr 2, 614) down to the symbols, although no reference to the article is made. The authors make a mistake in designating the Goryachev-Chaplygin case as the subject of their work, because in this case the vector of the kinetic moment is horizontal, and therefore the possibility of vertical permanent rotations is excluded; other inaccuracies are also tolerated. The problem of the stability of permanent rotations, in particular under the conditions in question, has been treated by

Card 1/2